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WILMINGTON, DELAWARE 19898

POLYMER PRODUCTS DEPARTMENT
EXPERIMENTAL STATION

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cc: A. J. Dahl - 353
B. W. Karrh - M11400
L. J. Papa - 269
Pral File
I.C.

AR226-1604

October 20, 1981

TO: DR. Y. L. POWER - PPD, Parkersburg
FROM: S. S. STAFFORD *S.S. / m2*

ANALYSIS OF BLOOD SAMPLES FOR PERFLUOROOCTANOATE
(Job No. 810-578; PRAL Nos. 81-4363-4386;
Notebook Nos. F22514, F26238, E27432)

As requested in your letter of 9/22/81 to L. J. Papa, the 21 blood samples submitted then have been analyzed for perfluorooctanoate (C₈) by the usual gas chromatographic method ES-567. Results and sample identification are given in the attached table.

Attachment
jah

Key Words:

Perfluorooctanoate
GC
Blood Analysis

There's a world of things we're doing something about.

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EID713875

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TABLE I
CONCENTRATION OF PERFLUOROOCTANOATE IN BLOOD (a)

<u>Sample PRAL No.</u>	<u>Date Sampled</u>	<u>P.R.No.</u>	<u>Name</u>	<u>GC Analysis Date Analyzed</u>	<u>[C_F], ug F/g bloo (b)</u>
81-4363	9/8/81	978		10/5/81	2.8
81-4364	9/8/81	W.S.		10/2/81	0.034
81-4365	9/8/81	3514		10/2/81	0.26
81-4366	9/9/81	W.S.		10/2/81	0.14
81-4367	9/9/81	W.S.		10/5/81	2.0
81-4368	9/9/81	4243		10/2/81	0.41
81-4369	9/9/81	3363		10/5/81	0.36
81-4370	9/10/81	4554		10/8/81	0.15
81-4371	9/10/81	4485		10/5 & 10/6/81	1.5
81-4372	9/10/81	3503		10/5/81	0.21
81-4373	9/11/81	W.S.		10/5/81	0.090
81-4374	9/11/81	W.S.		10/5/81	0.26
81-4375	9/14/81	3376		10/5 & 10/6/81	0.33
81-4376	9/14/81	932		10/8/81	0.33
81-4377	9/15/81	1482		10/9/81	2.6
81-4378	9/15/81	3933		10/8/81	0.071
81-4379	9/16/81	4278		10/8/81	1.1
81-4380	9/16/81	W.S.		10/8/81	0.11
81-4381	9/16/81	W.S.		10/6/81	0.060
81-4382	9/17/81	3897		10/8/81	0.20
81-4383	9/17/81	939		10/11/81	6.5
81-4384	9/18/81	4466		10/8/81	0.042
81-4385	9/20/81	W.S.		10/6/81	1.0
81-4386	9/20/81	-		10/6/81	0.13

- (a) Analysis as described in Lab Method ES-567 ("Determination of Perfluorooctanoic Acid in Blood, Gas Chromatographic Method", S. Stafford, 4/3/81), using the packed column GC analysis with perfluoroc-n-octanoic acid as calitration standard.
- (b) Although the analysis is specifically for perfluorooctanoate (acid or salts), concentrations are given in ppm fluorine for comparison with the results of total organic fluorine analyses. (ppm F = 0.688 x ppm perfluorooctanoic acid) Estimated uncertainty is \pm 10% relative standard deviation. The lower limit for quantitation is 0.007 $\mu\text{gF/g}$. The detection limit is \sim 0.004 $\mu\text{gF/g}$, but concentrations in that range cannot be well quantitated and are reported as < 0.007. None detected (n.d.) is reported for samples with $[\text{C}_F] \lesssim 0.004 \text{ ppm}$, which cannot be distinguished from reagent background.

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